

# AUDIT REPORT

Hostname: Dist\_SW1  
Config file name: Dist\_SW1\_startup-config.cfg  
Config hash: b92c994ebbb2fb6b8b9e2d089ed71f2320d31855  
Vendor: cisco  
OS: ios  
Facility layer: collapsed\_distribution\_access  
L3 protocols: ipv4  
Enabled functions: ospf ipv4,hsrp  
Date: 18/05/2020\_09:43

## SUCCESS STATISTICS

Weighted score coefficient: 52 out of 100  
Successful checks: 33.3%  
Unsuccessful checks: 66.7%

Total number of relevant started checks: 159

Successful checks: 53  
Unsuccessful 'Critical': 25  
Unsuccessful 'High': 45  
Unsuccessful 'Medium': 32  
Unsuccessful 'Low': 4  
Unsuccessful 'Notice': 0

## Authentication, Authorization, Accounting

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	AAA new model/ Enabled AAA	High	False	False	Error <span>✗</span>
<b>Generated fix:</b> aaa new-model					
2	AAA server set	High	False	False	Error <span>✗</span>
<b>Generated fix:</b> radius server RADIUS_SERVER address ipv4 192.168.60.11 key RadKey1					
3	AAA server group	High	False	False	Error <span>✗</span>
<b>Generated fix:</b> aaa group server radius RADIUS_SERVER server name RADIUS_SERVER					
4	AAA authentication login	High	False	False	Error <span>✗</span>
<b>Generated fix:</b> aaa authentication login default group RADIUS_SERVER local enable					
5	AAA authentication login fallback	High	False	False	Error <span>✗</span>

**Generated fix:**

aaa authentication login default group RADIUS\_SERVER local enable

6	AAA authentication login only local disabled	High	False	False	Successful
7	AAA authentication login none disabled	Critical	False	False	Successful
8	AAA authentication "enable"	Medium	False	False	Error

**Generated fix:**

aaa authentication enable default group RADIUS\_SERVER enable

9	AAA authentication "enable" fallback	Medium	False	False	Error
---	--------------------------------------	--------	-------	-------	-------

**Generated fix:**

aaa authentication enable default group RADIUS\_SERVER enable

10	AAA authentication "enable" only local disabled	Medium	False	False	Successful
11	AAA authentication "enable" none disabled	High	False	False	Successful
12	AAA authorization "exec"	High	False	False	Error

**Generated fix:**

aaa authorization exec default group RADIUS\_SERVER local if-authenticated

13	AAA authorization "exec" fallback	High	False	False	Error
----	-----------------------------------	------	-------	-------	-------

**Generated fix:**

aaa authorization exec default group RADIUS\_SERVER local if-authenticated

14	AAA authorization "exec" only local disabled	High	False	False	Successful
15	AAA authorization "exec" none disabled	Critical	False	False	Successful
16	AAA accounting "connection"	High	False	False	Error

**Generated fix:**

aaa accounting connection default start-stop group RADIUS\_SERVER

17	AAA accounting "connection" none disabled	High	False	False	Successful
18	AAA accounting "exec"	High	False	False	Error

**Generated fix:**

aaa accounting exec default start-stop group RADIUS\_SERVER

19	AAA accounting "exec" none disabled	High	False	False	Successful
20	AAA source interface	Medium	False	False	Error

**Generated fix:**

ip radius source-interface Loopback0

21	AAA authentication max attempts less or equal to 5	High	False	False	Successful
----	--	------	-------	-------	------------

**Access to device**

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Exec timeout <=5 minutes	Medium	False	False	Error

**Found error in context(s):**line con 0  
line vty 0 4

**Generated fix:**

line con 0  
exec-timeout 5

line vty 0 4  
exec-timeout 5

2	AUX connection input disabled	High	False	False	Successful ✓
3	AUX no execution set	High	False	False	Error ✗

**Found error in context(s):**

line aux 0

**Generated fix:**

line aux 0  
no exec

4	Remote output connections disabled	Medium	False	False	Error ✗
---	------------------------------------	--------	-------	-------	---------

**Found error in context(s):**

line con 0  
line aux 0  
line vty 0 4

**Generated fix:**

line con 0  
transport output none

line aux 0  
transport output none

line vty 0 4  
transport output none

5	Local user database with encrypted password	Critical	False	False	Error ✗
---	---	----------	-------	-------	---------

**Generated fix:**

username admin secret admin\_password

6	Local user database with plaintext password disabled	Critical	False	False	Successful ✓
7	Enable password encrypted	Critical	False	False	Error ✗

**Generated fix:**

enable secret enablepasswd123

8	Enable password plaintext disabled	Critical	False	False	Successful ✓
9	Local login to virtual terminal disabled	Critical	False	False	Error ✗

**Error configuration setting found in:**

line vty 0 4  
login

**Found error in context(s):**

line vty 0 4

10	Restrict login to device - IPv4 ACL	Critical	False	False	Error ✗
----	-------------------------------------	----------	-------	-------	---------

**Found error in context(s):**

line vty 0 4

**Generated fix:**

line vty 0 4  
access-class IPV4\_VTY\_ACL in

11	ACL specified for VTY access is created	Critical	False	False	Error ✗
----	---	----------	-------	-------	---------

**Comment:**

Cannot be fixed automatically!

**Fix notice:**

Cannot be fixed automatically! If search is not successful create ACL, which permits only needed end stations for managing devices with these commands:

```
ip access-list standard <acl name>
remark Permiting managemnt device
permit <ip address> <wildcard mask>
```

12	Log login to device on failure	High	False	False	Error ❌
----	--------------------------------	------	-------	-------	---------

**Generated fix:**

```
login on-failure trap
login on-failure log
login on-failure log-input
```

**Fix notice:**

Depending on IOS, usually just one of fixing command is applicable to device. There are more because of different syntax and support among IOS versions.

13	Log login to device on success	Medium	False	False	Error ❌
----	--------------------------------	--------	-------	-------	---------

**Generated fix:**

```
login on-success trap
login on-success log
login on-success log-input
```

**Fix notice:**

Depending on IOS, usually just one of fixing command is applicable to device. There are more because of different syntax and support among IOS versions.

14	Login quiet mode	Medium	False	False	Error ❌
----	------------------	--------	-------	-------	---------

**Generated fix:**

```
login quiet-mode access-class IPV4_VTY_ACL
```

15	ACL exists for specified login quiet mode	Medium	False	False	Error ❌
----	---	--------	-------	-------	---------

**Comment:**

Cannot be fixed automatically!

**Fix notice:**

Cannot be fixed automatically! If search is not successful create ACL, which permits only needed end stations for managing devices with these commands:

```
ip access-list standard <acl name>
remark Permiting managemnt device
permit <ip address> <wildcard mask>
```

16	One user change config at time	High	False	False	Error ❌
----	--------------------------------	------	-------	-------	---------

**Generated fix:**

```
configuration mode exclusive
configuration mode exclusive auto
```

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

17	Legal banner MOTD	Low	False	False	Error ❌
----	-------------------	-----	-------	-------	---------

**Generated fix:**

```
banner motd ; Unauthorized access will be prosecuted!! ;
```

18	Legal banner exec	Low	False	False	Successful ✅
----	-------------------	-----	-------	-------	--------------

**Right configuration setting found in:**

```
banner exec ^C
*****
* IOSv is strictly limited to use for evaluation, demonstration and IOS *
* education. IOSv is provided as-is and is not supported by Cisco's *
* Technical Advisory Center. Any use or disclosure, in whole or in part, *
* of the IOSv Software or Documentation to any third party for any *
* purposes is expressly prohibited except as otherwise authorized by *
* Cisco in writing. *
*****^C
```

19	Legal banner login	Low	False	False	Successful ✅
----	--------------------	-----	-------	-------	--------------

**Right configuration setting found in:**

banner login ^C

\*\*\*\*\*

\* IOSv is strictly limited to use for evaluation, demonstration and IOS \*  
\* education. IOSv is provided as-is and is not supported by Cisco's \*  
\* Technical Advisory Center. Any use or disclosure, in whole or in part, \*  
\* of the IOSv Software or Documentation to any third party for any \*  
\* purposes is expressly prohibited except as otherwise authorized by \*  
\* Cisco in writing. \*

\*\*\*\*\*^C

20	Session timeout	Medium	False	False	Error
----	-----------------	--------	-------	-------	-------

**Found error in context(s):**

line con 0

line aux 0

line vty 0 4

**Generated fix:**

line con 0

session-timeout 30

line aux 0

session-timeout 30

line vty 0 4

session-timeout 30

21	AUX exec timeout one second	High	False	False	Error
----	-----------------------------	------	-------	-------	-------

**Found error in context(s):**

line aux 0

**Generated fix:**

line aux 0

exec-timeout 0 1

22	Restrict login to device - IPv6 ACL	Critical	True	False	Not relevant
----	-------------------------------------	----------	------	-------	--------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

23	ACL IPv6 specified for VTY access is created	Critical	True	False	Not relevant
----	--	----------	------	-------	--------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

24	Login DOS block for	High	False	False	Error
----	---------------------	------	-------	-------	-------

**Generated fix:**

login block-for 120 attempts 3 within 30

## SSH

No.	Name	Severity	Skipped	Cannot determine Status search/fix
-----	------	----------	---------	------------------------------------

1	SSH enable on management connection	Critical	False	False	Error
---	-------------------------------------	----------	-------	-------	-------

**Found error in context(s):**

line vty 0 4

**Generated fix:**

line vty 0 4

transport input ssh

**Fix notice:**

Make sure RSA key is present - generated or imported. For generating RSA key, issue command:

crypto key generate rsa modulus 2048

2	SSH version 2	Critical	False	False	Error
---	---------------	----------	-------	-------	-------

**Generated fix:**

ip ssh version 2

3	SSH timeout	Medium	False	False	Error ❌
---	-------------	--------	-------	-------	---------

**Generated fix:**

ip ssh timeout 30

ip ssh time-out 30

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

4	SSH max 3 retries	Medium	False	False	Successful ✔
---	-------------------	--------	-------	-------	--------------

5	SSH source interface	High	False	False	Error ❌
---	----------------------	------	-------	-------	---------

**Generated fix:**

ip ssh source-interface Loopback0

6	SSH not default port	High	False	False	Error ❌
---	----------------------	------	-------	-------	---------

**Generated fix:**

ip ssh port 2223 rotary 1

7	SSH not default port applied	High	False	False	Error ❌
---	------------------------------	------	-------	-------	---------

**Found error in context(s):**

line vty 0 4

**Generated fix:**

line vty 0 4

rotary 1

## Device identification

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Hostname set	Low	False	False	Successful ✔

**Comment:**

Cannot be fixed automatically!

**Right configuration setting found in:**

hostname Dist\_SW1

2	Domain name set	Low	False	False	Error ❌
---	-----------------	-----	-------	-------	---------

**Generated fix:**

ip domain-name thesis-test.cz

ip domain name thesis-test.cz

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

3	All interfaces have description	Low	False	False	Error ❌
---	---------------------------------	-----	-------	-------	---------

**Comment:**

Cannot be fixed automatically!

**Right configuration setting found in:**

interface GigabitEthernet0/0

description uplink

**Found port(s) with error:**

Port-channel1  
GigabitEthernet0/1  
GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/0  
GigabitEthernet1/1  
GigabitEthernet1/2  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3  
Vlan20  
Vlan30

**Fix notice:**

Set interface description with command:  
interface <interface name>  
description <description of interface>

**Fix ignore comment:**

Fixing commands suppressed due to manual need of manual change and name determination.

## SNMP

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	SNMP v2 write disabled	Critical	False	False	Error ❌
<b>Error configuration setting found in:</b> snmp-server community SNMP_V2 RW					
2	SNMP v2 read without ACL disabled	Critical	False	False	Successful ✔️
3	SNMP v2 read with ACL disabled	Critical	False	False	Successful ✔️
4	SNMP v1 trap host disabled	Critical	False	False	Successful ✔️
5	SNMP v2 trap host disabled	Critical	False	False	Successful ✔️
6	SNMP v3 read [authnopriv noauth authpriv without ACL] or write disabled	Critical	False	False	Successful ✔️
7	SNMP v3 read authpriv with ACL enabled	Critical	False	False	Error ❌
<b>Generated fix:</b> snmp-server group SNMP_V3_GRP v3 priv read READVIEWv3 access SNMP_V3 snmp-server user SNMPv3USER SNMP_V3_GRP v3 auth sha SnmpPasswd123 priv aes 256 SnmpPasswd123 access SNMP_V3					
8	SNMP v3 read authpriv with IPv6 ACL enabled	Critical	True	False	Not relevant ✔️
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
9	SNMP user v1 v2c or v3 [noauth authnopriv no sha no aes without ACL] disabled	Critical	False	False	Successful ✔️
10	SNMP trap source interface	High	False	False	Error ❌
<b>Generated fix:</b> snmp-server trap-source Loopback0					
11	SNMP server location	High	False	False	Error ❌
<b>Generated fix:</b> snmp-server location GNS3LAB					
12	SNMP v3 traps priv	Medium	False	False	Error ❌

**Generated fix:**

snmp-server host 192.168.60.11 version 3 priv SNMPv3USER

13	SNMP traps v3 read [authnopriv noauth] or v1 v2 disabled	Critical	False	False	Successful ✓
14	SNMP traps enabled	Medium	False	False	Error ✗

**Generated fix:**

snmp-server enable traps

15	ACL is created for SNMPv3	Critical	False	False	Error ✗
----	---------------------------	----------	-------	-------	---------

**Comment:**

Cannot be fixed automatically!

**Fix notice:**

Cannot be fixed automatically! If search is not successful create ACL, which permits only needed end stations for receiving SNMP with these commands:

ip access-list standard <acl name>

remark Permitting SNMP

permit <ip address> <wildcard mask>

16	ACL IPv6 is created for SNMPv3	Critical	True	False	Not relevant ✓
----	--------------------------------	----------	------	-------	----------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

17	SNMP interface index persist enabled globally	High	False	False	Error ✗
----	---	------	-------	-------	---------

**Generated fix:**

snmp-server ifindex persist

snmp ifmib ifindex persist

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

18	SNMP interface index persist enabled per interface	High	False	False	Error ✗
----	--	------	-------	-------	---------

**Found port(s) with error:**

Port-channel1

GigabitEthernet0/0

GigabitEthernet0/1

GigabitEthernet0/2

GigabitEthernet0/3

GigabitEthernet1/0

GigabitEthernet1/1

GigabitEthernet1/2

GigabitEthernet1/3

GigabitEthernet2/0

GigabitEthernet2/1

GigabitEthernet2/2

GigabitEthernet2/3

GigabitEthernet3/0

GigabitEthernet3/1

GigabitEthernet3/2

GigabitEthernet3/3

Vlan20

Vlan30



**Generated fix:**

```
interface Port-channel1
snmp ifindex persist
exit
interface GigabitEthernet0/0
snmp ifindex persist
exit
interface GigabitEthernet0/1
snmp ifindex persist
exit
interface GigabitEthernet0/2
snmp ifindex persist
exit
interface GigabitEthernet0/3
snmp ifindex persist
exit
interface GigabitEthernet1/0
snmp ifindex persist
exit
interface GigabitEthernet1/1
snmp ifindex persist
exit
interface GigabitEthernet1/2
snmp ifindex persist
exit
interface GigabitEthernet1/3
snmp ifindex persist
exit
interface GigabitEthernet2/0
snmp ifindex persist
exit
interface GigabitEthernet2/1
snmp ifindex persist
exit
interface GigabitEthernet2/2
snmp ifindex persist
exit
interface GigabitEthernet2/3
snmp ifindex persist
exit
interface GigabitEthernet3/0
snmp ifindex persist
exit
interface GigabitEthernet3/1
snmp ifindex persist
exit
interface GigabitEthernet3/2
snmp ifindex persist
exit
interface GigabitEthernet3/3
snmp ifindex persist
exit
interface Vlan20
snmp ifindex persist
exit
interface Vlan30
snmp ifindex persist
exit
```

## Syslog

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Syslog server enabled	High	False	False	Successful ✓
<b>Right configuration setting found in:</b> logging host 192.168.50.11					
2	Syslog server IPv6 enabled	High	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
3	Syslog source interface	Medium	False	False	Error ✗

**Generated fix:**  
logging source-interface Loopback0

4	Syslog format	Medium	False	False	Successful
---	---------------	--------	-------	-------	------------

**Right configuration setting found in:**  
service timestamps log datetime msec

5	Syslog critical alerts to console	Medium	False	False	Successful
---	-----------------------------------	--------	-------	-------	------------

**Right configuration setting found in:**  
logging console critical

6	Syslog send informational traps	High	False	False	Successful
---	---------------------------------	------	-------	-------	------------

7	Syslog buffer set with severity	High	False	False	Error
---	---------------------------------	------	-------	-------	-------

**Generated fix:**  
logging buffered 40960 informational

8	Syslog local backup	High	False	False	Error
---	---------------------	------	-------	-------	-------

**Generated fix:**  
logging persistent url flash:

9	Syslog sequence numbers added	Medium	False	False	Error
---	-------------------------------	--------	-------	-------	-------

**Generated fix:**  
service sequence-numbers

## NTP

No.	Name	Severity	Skipped	Cannot determine Status search/fix
-----	------	----------	---------	------------------------------------

1	NTP server set	High	False	False	Error
---	----------------	------	-------	-------	-------

**Generated fix:**  
ntp server 192.168.60.11

2	NTP source interface	Medium	False	False	Error
---	----------------------	--------	-------	-------	-------

**Generated fix:**  
ntp source Loopback0

3	NTP authentication key	High	False	False	Error
---	------------------------	------	-------	-------	-------

**Generated fix:**  
ntp authentication-key 1 md5 ntpPasswd123

4	NTP trusted key	High	False	False	Error
---	-----------------	------	-------	-------	-------

**Generated fix:**  
ntp trusted-key 1

5	NTP authenticate	High	False	False	Error
---	------------------	------	-------	-------	-------

**Generated fix:**  
ntp authenticate

## High load

No.	Name	Severity	Skipped	Cannot determine Status search/fix
-----	------	----------	---------	------------------------------------

1	SNMP traps for CPU load	Medium	False	False	Error
---	-------------------------	--------	-------	-------	-------

**Generated fix:**

snmp-server enable traps cpu threshold

2	Threshold for CPU load	Medium	False	False	Error ❌
---	------------------------	--------	-------	-------	---------

**Generated fix:**

process cpu threshold type total rising 70 interval 5

3	Statistics entry for CPU load	Low	False	False	Error ❌
---	-------------------------------	-----	-------	-------	---------

**Generated fix:**

process cpu statistics limit entry-percentage 70

4	Reserve memory for critical notification	Medium	False	False	Error ❌
---	--	--------	-------	-------	---------

**Generated fix:**

memory reserve critical 1000

5	Minimum CPU memory notification	Medium	False	False	Error ❌
---	---------------------------------	--------	-------	-------	---------

**Generated fix:**

memory free low-watermark processor 2000

6	Minimum IO memory notification	Medium	False	False	Error ❌
---	--------------------------------	--------	-------	-------	---------

**Generated fix:**

memory free low-watermark io 2000

## Spanning tree

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Portfast globally enabled	High	False	False	Error ❌

**Generated fix:**

spanning-tree portfast default  
spanning-tree portfast edge default

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

2	Portfast enabled on access interface	High	False	False	Error ❌
---	--------------------------------------	------	-------	-------	---------

**Found port(s) with error:**

GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3

**Generated fix:**

```
interface GigabitEthernet0/2
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet0/3
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet1/3
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet2/0
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet2/1
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet2/2
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet2/3
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet3/0
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet3/1
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet3/2
spanning-tree portfast
spanning-tree portfast edge
exit
interface GigabitEthernet3/3
spanning-tree portfast
spanning-tree portfast edge
exit
```

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

3	BPDU Guard globally enabled	Critical	False	False	Error ❌
---	-----------------------------	----------	-------	-------	---------

**Generated fix:**

```
spanning-tree portfast bpduguard default
spanning-tree portfast edge bpduguard default
```

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

4	BPDU Guard enabled on access interface High	False	False	Error ❌
---	---	-------	-------	---------

**Found port(s) with error:**

- GigabitEthernet0/2
- GigabitEthernet0/3
- GigabitEthernet1/3
- GigabitEthernet2/0
- GigabitEthernet2/1
- GigabitEthernet2/2
- GigabitEthernet2/3
- GigabitEthernet3/0
- GigabitEthernet3/1
- GigabitEthernet3/2
- GigabitEthernet3/3

**Generated fix:**  
interface GigabitEthernet0/2  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet0/3  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet1/3  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet2/0  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet2/1  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet2/2  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet2/3  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet3/0  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet3/1  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet3/2  
spanning-tree bpduguard enable  
exit  
interface GigabitEthernet3/3  
spanning-tree bpduguard enable  
exit

5	BPDU Filter globally disabled	Critical	False	False	Successful ✓
6	BPDU Filter disabled on access interface	High	False	False	Not relevant ✓

**Comment:**  
Module 09\_06\_stp\_bpdu\_filter\_interface.yaml configured to run after 09\_05\_stp\_bpdu\_filter.yaml with status error but that module has not run yet with specified cmd\_match\_status, 09\_06\_stp\_bpdu\_filter\_interface.yaml will not run

7	Loop Guard globally enabled	Critical	False	False	Error ✗
---	-----------------------------	----------	-------	-------	---------

**Generated fix:**  
spanning-tree loopguard default

8	Loop Guard enabled on access interface	High	False	False	Error ✗
---	--	------	-------	-------	---------

**Found port(s) with error:**

Port-channel1  
GigabitEthernet0/1  
GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/0  
GigabitEthernet1/1  
GigabitEthernet1/2  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3

**Generated fix:**

```
interface Port-channel1
spanning-tree guard loop
exit
interface GigabitEthernet0/1
spanning-tree guard loop
exit
interface GigabitEthernet0/2
spanning-tree guard loop
exit
interface GigabitEthernet0/3
spanning-tree guard loop
exit
interface GigabitEthernet1/0
spanning-tree guard loop
exit
interface GigabitEthernet1/1
spanning-tree guard loop
exit
interface GigabitEthernet1/2
spanning-tree guard loop
exit
interface GigabitEthernet1/3
spanning-tree guard loop
exit
interface GigabitEthernet2/0
spanning-tree guard loop
exit
interface GigabitEthernet2/1
spanning-tree guard loop
exit
interface GigabitEthernet2/2
spanning-tree guard loop
exit
interface GigabitEthernet2/3
spanning-tree guard loop
exit
interface GigabitEthernet3/0
spanning-tree guard loop
exit
interface GigabitEthernet3/1
spanning-tree guard loop
exit
interface GigabitEthernet3/2
spanning-tree guard loop
exit
interface GigabitEthernet3/3
spanning-tree guard loop
exit
```

## VLAN

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Default Vlan not used	Critical	False	False	Error ❌
<b>Comment:</b> Cannot be fixed automatically! Cannot automatically determine VLAN assignment to port.					
<b>Found port(s) with error:</b> GigabitEthernet0/2 GigabitEthernet0/3 GigabitEthernet1/3 GigabitEthernet2/0 GigabitEthernet2/1 GigabitEthernet2/2 GigabitEthernet2/3 GigabitEthernet3/0 GigabitEthernet3/1 GigabitEthernet3/2 GigabitEthernet3/3					
<b>Fix notice:</b> Eliminate ports with default Vlan by command with Vlan ID different than 1 interface <interface name> switchport mode access switchport access vlan <vlan id>					
2	Management VLAN + SVI set and different than 1	Medium	False	False	Successful ✅
<b>Comment:</b> Cannot be fixed automatically! Cannot automatically set different IP among SVI(s) a lot of prerequisites must be met as existing VLAN and port assigned to VLAN.					
<b>Right configuration setting found in:</b> interface Vlan20 ip address 192.168.20.3 255.255.255.0 standby 20 ip 192.168.20.1					
3	Management VLAN gateway	Medium	False	False	Error ❌
<b>Comment:</b> Cannot be fixed automatically! Cannot automatically set default gateway among different switches.					
<b>Fix notice:</b> Default gateway can be set with command: ip default-gateway <ip address>					
4	Native vlan different than 1	Critical	False	False	Successful ✅

**Right configuration setting found in:**

```
interface Port-channel1
switchport trunk native vlan 100
interface GigabitEthernet0/1
switchport trunk native vlan 100
interface GigabitEthernet1/0
switchport trunk native vlan 100
interface GigabitEthernet1/1
switchport trunk native vlan 100
interface GigabitEthernet1/2
switchport trunk native vlan 100
```

5	Specified allowed VLAN on trunk	Critical	False	False	Successful ✓
---	---------------------------------	----------	-------	-------	--------------

**Right configuration setting found in:**

```
interface Port-channel1
switchport trunk allowed vlan 20,30
interface GigabitEthernet0/1
switchport trunk allowed vlan 20,30
interface GigabitEthernet1/0
switchport trunk allowed vlan 20,30
interface GigabitEthernet1/1
switchport trunk allowed vlan 20,30
interface GigabitEthernet1/2
switchport trunk allowed vlan 20,30
```

6	Switchport mode dynamic disabled	Critical	False	False	Successful ✓
---	----------------------------------	----------	-------	-------	--------------

7	Switchport implicit dynamic disabled	Critical	False	False	Error ✗
---	--------------------------------------	----------	-------	-------	---------

**Found port(s) with error:**

```
GigabitEthernet0/2
GigabitEthernet0/3
GigabitEthernet1/3
GigabitEthernet2/0
GigabitEthernet2/1
GigabitEthernet2/2
GigabitEthernet2/3
GigabitEthernet3/0
GigabitEthernet3/1
GigabitEthernet3/2
GigabitEthernet3/3
```

**Generated fix:**

```
interface GigabitEthernet0/2
switchport mode access
exit
interface GigabitEthernet0/3
switchport mode access
exit
interface GigabitEthernet1/3
switchport mode access
exit
interface GigabitEthernet2/0
switchport mode access
exit
interface GigabitEthernet2/1
switchport mode access
exit
interface GigabitEthernet2/2
switchport mode access
exit
interface GigabitEthernet2/3
switchport mode access
exit
interface GigabitEthernet3/0
switchport mode access
exit
interface GigabitEthernet3/1
switchport mode access
exit
interface GigabitEthernet3/2
switchport mode access
exit
interface GigabitEthernet3/3
switchport mode access
exit
```

8	DTP disabled	Critical	False	False	Error ✗
---	--------------	----------	-------	-------	---------



**Right configuration setting found in:**

```
interface Port-channel1
switchport nonegotiate
interface GigabitEthernet0/1
switchport nonegotiate
interface GigabitEthernet1/0
switchport nonegotiate
interface GigabitEthernet1/1
switchport nonegotiate
interface GigabitEthernet1/2
switchport nonegotiate
```

**Found port(s) with error:**

```
GigabitEthernet0/2
GigabitEthernet0/3
GigabitEthernet1/3
GigabitEthernet2/0
GigabitEthernet2/1
GigabitEthernet2/2
GigabitEthernet2/3
GigabitEthernet3/0
GigabitEthernet3/1
GigabitEthernet3/2
GigabitEthernet3/3
```

**Generated fix:**

```
interface GigabitEthernet0/2
switchport nonegotiate
exit
interface GigabitEthernet0/3
switchport nonegotiate
exit
interface GigabitEthernet1/3
switchport nonegotiate
exit
interface GigabitEthernet2/0
switchport nonegotiate
exit
interface GigabitEthernet2/1
switchport nonegotiate
exit
interface GigabitEthernet2/2
switchport nonegotiate
exit
interface GigabitEthernet2/3
switchport nonegotiate
exit
interface GigabitEthernet3/0
switchport nonegotiate
exit
interface GigabitEthernet3/1
switchport nonegotiate
exit
interface GigabitEthernet3/2
switchport nonegotiate
exit
interface GigabitEthernet3/3
switchport nonegotiate
exit
```

9	VTP disabled	Critical	False	False	Successful ✓
---	--------------	----------	-------	-------	--------------

## Network Mapping

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	CDP globally disabled	Critical	False	False	Successful ✓
<b>Right configuration setting found in:</b> no cdp run					
2	CDP disabled on interface(s)	Critical	False	False	Matched by equivalent ✓
<b>Comment:</b> Module was marked as matched by equivalent by module 11_01_cdp_run_disabled.yaml					


3	LLDP globally disabled	Critical	False	False	Successful ✓
4	LLDP receive disabled on interface(s)	Critical	False	False	Not relevant ✓
<b>Comment:</b> Module 11_04_lldp_receive.yaml configured to run after 11_03_lldp_run_disabled.yaml with status error but that module has not run yet with specified cmd_match_status, 11_04_lldp_receive.yaml will not run					
5	LLDP transmit disabled on interface(s)	Critical	False	False	Not relevant ✓
<b>Comment:</b> Module 11_05_lldp_transmit.yaml configured to run after 11_03_lldp_run_disabled.yaml with status error but that module has not run yet with specified cmd_match_status, 11_05_lldp_transmit.yaml will not run					
6	Proxy ARP disabled on interface(s)	Critical	False	False	Error ✗
<b>Found port(s) with error:</b> GigabitEthernet0/0 Vlan20 Vlan30  <b>Generated fix:</b> interface GigabitEthernet0/0 no ip proxy-arp exit interface Vlan20 no ip proxy-arp exit interface Vlan30 no ip proxy-arp exit					
7	ICMP Unreachable disabled on interface(s)	High	False	False	Error ✗
<b>Found port(s) with error:</b> GigabitEthernet0/0 Vlan20 Vlan30  <b>Generated fix:</b> interface GigabitEthernet0/0 no ip unreachableables exit interface Vlan20 no ip unreachableables exit interface Vlan30 no ip unreachableables exit					
8	ICMPv6 Unreachable disabled on interface(s)	High	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
9	ICMP Mask Reply disabled on interface(s)	High	False	False	Successful ✓
10	Directed broadcast disabled on interface(s)	Critical	False	False	Successful ✓
11	ICMP Redirects disabled on interface(s)	High	False	False	Error ✗
<b>Found port(s) with error:</b> GigabitEthernet0/0 Vlan20 Vlan30  <b>Generated fix:</b> interface GigabitEthernet0/0 no ip redirects exit interface Vlan20 no ip redirects exit interface Vlan30 no ip redirects exit					
12	ICMP 224.0.0.1 ping disabled in ACL	Medium	False	False	Error ✗

**Generated fix:**

```
ip access-list extended DENY_NETWORK_MAP
remark deny ping all nodes
deny icmp any host 224.0.0.1 echo log-input
remark deny host query
deny igmp any any host-query log-input
permit ip any any
```

**Fix notice:**

Some devices do not recognize parameter "log-input" in ACL, so manually replace it with "log"


13	IGMP Host Query disabled in ACL	Medium	False	False	Error 
----	---------------------------------	--------	-------	-------	---

**Generated fix:**

```
ip access-list extended DENY_NETWORK_MAP
remark deny ping all nodes
deny icmp any host 224.0.0.1 echo log-input
remark deny host query
deny igmp any any host-query log-input
permit ip any any
```


**Fix notice:**

Some devices do not recognize parameter "log-input" in ACL, so manually replace it with "log"

14	ICMPv6 ff02::1 ping disabled in ACL	Medium	True	False	Not relevant 
----	-------------------------------------	--------	------	-------	--


**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

15	MLD Host Query disabled in ACL	Medium	True	False	Not relevant 
----	--------------------------------	--------	------	-------	--

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

16	ACL against IPv4 network monitoring applied on interface(s)	Medium	False	False	Error 
----	---	--------	-------	-------	---

**Found port(s) with error:**

GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3

**Generated fix:**

```
interface GigabitEthernet0/2
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet0/3
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet1/3
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet2/0
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet2/1
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet2/2
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet2/3
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet3/0
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet3/1
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet3/2
ip access-group DENY_NETWORK_MAP in
exit
interface GigabitEthernet3/3
ip access-group DENY_NETWORK_MAP in
exit
```

**Fix notice:**

ACL will be applied to specified ACCESS interface(s). In case of existing ACL on interface in same direction, please set variable fix\_cmd\_ignore: "true" and append generated ACL from module 11\_12\_icmp\_discovery\_network to existing ACL to proper place.

17	ACL against IPv6 network monitoring applied on interface(s)	Medium	True	False	Not relevant ✓
----	---	--------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

## Routing

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	OSPF IPv4 Router ID	Medium	False	False	Error ✗
<b>Found error in context(s):</b> router ospf 1  <b>Generated fix:</b> router ospf 1 router-id 1.1.1.1					
2	OSPF IPv6 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ospf ipv6 not configured on device. Everything is OK.					
3	OSPFv3 Address Family General Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ospfv3 not configured on device. Everything is OK.					
4	OSPFv3 Address Family IPv4 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ospfv3 not configured on device. Everything is OK.					

5	OSPFv3 Address Family IPv6 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
6	EIGRP IPv4 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp ipv4 not configured on device. Everything is OK.					
7	EIGRP IPv6 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp ipv6 not configured on device. Everything is OK.					
8	EIGRP Named IPv4 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp named not configured on device. Everything is OK.					
9	EIGRP Named IPv6 Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
10	BGP Router ID	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function bgp not configured on device. Everything is OK.					
11	OSPF IPv4 Log adjacency changes	Medium	False	False	Successful ✓
12	OSPF IPv6 Log adjacency changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ospf ipv6 not configured on device. Everything is OK.					
13	OSPFv3 Address Family IPv6 Log adjacency changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
14	OSPFv3 Address Family IPv4 Log adjacency changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ospfv3 not configured on device. Everything is OK.					
15	OSPFv3 Address Family IPv6 Log adjacency changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
16	EIGRP IPv4 Log neighbor changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp ipv4 not configured on device. Everything is OK.					
17	EIGRP IPv6 Log neighbor changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp ipv6 not configured on device. Everything is OK.					
18	EIGRP Named IPv4 Log neighbor changes	Medium	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function eigrp named not configured on device. Everything is OK.					
19	EIGRP Named IPv6 Log neighbor changes	Medium	True	False	Not relevant ✓

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

20	BGP Log neighbor changes	Medium	True	False	Not relevant ✓
----	--------------------------	--------	------	-------	-------------------

**Comment:**

Skipped, required function bgp not configured on device. Everything is OK.

21	RIP auto summary disabled	High	True	False	Not relevant ✓
----	---------------------------	------	------	-------	-------------------

**Comment:**

Skipped, required function rip not configured on device. Everything is OK.

22	EIGRP IPv4 Auto summary disabled	High	True	False	Not relevant ✓
----	----------------------------------	------	------	-------	-------------------

**Comment:**

Skipped, required function eigrp ipv4 not configured on device. Everything is OK.

23	EIGRP IPv6 Auto summary disabled	High	True	False	Not relevant ✓
----	----------------------------------	------	------	-------	-------------------

**Comment:**

Skipped, required function eigrp ipv6 not configured on device. Everything is OK.

24	EIGRP Named IPv4 Auto summary disabled	High	True	False	Not relevant ✓
----	--	------	------	-------	-------------------

**Comment:**

Skipped, required function eigrp named not configured on device. Everything is OK.

25	EIGRP Named IPv6 Auto summary disabled	High	True	False	Not relevant ✓
----	--	------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

26	BGP Auto summary disabled	High	True	False	Not relevant ✓
----	---------------------------	------	------	-------	-------------------

**Comment:**

Skipped, required function bgp not configured on device. Everything is OK.

27	BGP Multihop disabled or TTL security used	High	True	False	Not relevant ✓
----	--	------	------	-------	-------------------

**Comment:**

Skipped, required function bgp not configured on device. Everything is OK.

28	IP Source routing (IP Options) disabled	Critical	False	False	Successful ✓
----	---	----------	-------	-------	--------------

## Filtering

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	IP Options disabled	Critical	False	False	Error ✗
<b>Generated fix:</b> ip options drop					
<b>Fix notice:</b> RSVP and other protocols that use IP Options packets may not function as expected.					
2	ACL filter IPv6 unknown extended header	Critical	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					
3	ACL filter IPv6 unknown extended header applied on ACCESS interface	Critical	True	False	Not relevant ✓
<b>Comment:</b> Skipped, required function ipv6 not configured on device. Everything is OK.					

## First Hop Security

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Port security enabled	Critical	False	False	Error <span>✖</span>
<b>Found port(s) with error:</b> GigabitEthernet0/2 GigabitEthernet0/3 GigabitEthernet1/3 GigabitEthernet2/0 GigabitEthernet2/1 GigabitEthernet2/2 GigabitEthernet2/3 GigabitEthernet3/0 GigabitEthernet3/1 GigabitEthernet3/2 GigabitEthernet3/3					

Generated fix:

```
interface GigabitEthernet0/2
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet0/3
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet1/3
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet2/0
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet2/1
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet2/2
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet2/3
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet3/0
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet3/1
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet3/2
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
interface GigabitEthernet3/3
switchport port-security mac-address sticky
switchport port-security maximum 1
switchport port-security violation shutdown
switchport port-security
exit
```

2	Port security maximum 1 allowed MAC on port	Critical	False	False	Successful
3	Port security violation shutdown	Critical	False	False	Successful
4	802.1x globally enabled	High	False	False	Error


Generated fix:

```
dot1x system-auth-control
```

5	AAA authentication 802.1x	High	False	False	Error
---	---------------------------	------	-------	-------	-------



**Generated fix:**  
aaa authentication dot1x default group RADIUS\_SERVER

6	802.1x enabled on interfaces	High	False	False	Error 
---	------------------------------	------	-------	-------	---



**Found port(s) with error:**  
GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3

**Generated fix:**

```
interface GigabitEthernet0/2
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet0/3
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet1/3
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet2/0
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet2/1
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet2/2
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet2/3
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet3/0
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet3/1
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet3/2
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
interface GigabitEthernet3/3
access-session port-control auto
authentication port-control auto
dot1x port-control auto
yes
exit
```

**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.


7	802.1x enabled on interfaces	High	False	False	Successful 
8	802.1x port set authenticator	High	False	False	Error 

**Found port(s) with error:**

GigabitEthernet0/2  
GigabitEthernet0/3  
GigabitEthernet1/3  
GigabitEthernet2/0  
GigabitEthernet2/1  
GigabitEthernet2/2  
GigabitEthernet2/3  
GigabitEthernet3/0  
GigabitEthernet3/1  
GigabitEthernet3/2  
GigabitEthernet3/3

**Generated fix:**

```
interface GigabitEthernet0/2
dot1x pae authenticator
exit
interface GigabitEthernet0/3
dot1x pae authenticator
exit
interface GigabitEthernet1/3
dot1x pae authenticator
exit
interface GigabitEthernet2/0
dot1x pae authenticator
exit
interface GigabitEthernet2/1
dot1x pae authenticator
exit
interface GigabitEthernet2/2
dot1x pae authenticator
exit
interface GigabitEthernet2/3
dot1x pae authenticator
exit
interface GigabitEthernet3/0
dot1x pae authenticator
exit
interface GigabitEthernet3/1
dot1x pae authenticator
exit
interface GigabitEthernet3/2
dot1x pae authenticator
exit
interface GigabitEthernet3/3
dot1x pae authenticator
exit
```


9	DHCP Snooping globally enabled	Critical	False	False	Error 
---	--------------------------------	----------	-------	-------	---

**Generated fix:**

ip dhcp snooping


**Fix notice:**

On router(s) to DHCP server issue command "ip dhcp relay information trust-all"

10	DHCP Snooping enabled for VLAN(s)	Critical	False	False	Error 
----	-----------------------------------	----------	-------	-------	---

**Generated fix:**

ip dhcp snooping vlan 10,20,30,40,50,60


11	DHCP Snooping trust interface(s) set	Critical	False	False	Error 
----	--------------------------------------	----------	-------	-------	---

**Found port(s) with error:**

Port-channel1  
GigabitEthernet0/1  
GigabitEthernet1/0  
GigabitEthernet1/1  
GigabitEthernet1/2

**Generated fix:**

```
interface Port-channel1
ip dhcp snooping trust
exit
interface GigabitEthernet0/1
ip dhcp snooping trust
exit
interface GigabitEthernet1/0
ip dhcp snooping trust
exit
interface GigabitEthernet1/1
ip dhcp snooping trust
exit
interface GigabitEthernet1/2
ip dhcp snooping trust
exit
```

12	DHCP Snooping rate limit fo ACCESS interface(s) set	High	False	False	Error 
----	---	------	-------	-------	---

**Found port(s) with error:**

```
GigabitEthernet0/2
GigabitEthernet0/3
GigabitEthernet1/3
GigabitEthernet2/0
GigabitEthernet2/1
GigabitEthernet2/2
GigabitEthernet2/3
GigabitEthernet3/0
GigabitEthernet3/1
GigabitEthernet3/2
GigabitEthernet3/3
```

**Generated fix:**

```
interface GigabitEthernet0/2
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet0/3
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet1/3
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet2/0
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet2/1
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet2/2
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet2/3
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet3/0
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet3/1
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet3/2
ip dhcp snooping limit rate 100
exit
interface GigabitEthernet3/3
ip dhcp snooping limit rate 100
exit
```

13	IPv6 Unicast Routing enabled	Critical	True	False	Not relevant ✓
----	------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

14	IPv6 RA Guard host policy defined	Critical	True	False	Not relevant ✓
----	-----------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

15	IPv6 RA Guard on ACCESS interface(s)	Critical	True	False	Not relevant ✓
----	--------------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

16	DHCPv6 Server policy	Critical	True	False	Not relevant ✓
----	----------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

17	DHCPv6 Client policy	Critical	True	False	Not relevant ✓
----	----------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

18	DHCPv6 Guard server interface(s) set	Critical	True	False	Not relevant ✓
----	--------------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

19	DHCPv6 Guard client interface(s) set	Critical	True	False	Not relevant ✓
----	--------------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

20	Dynamic ARP Inspection enabled for VLAN(s)	Critical	False	False	Error ✗
----	--	----------	-------	-------	---------

**Generated fix:**

ip arp inspection vlan 10,20,30,40,50,60

21	Dynamic ARP Inspection validate by SRC,DST MAC and IP	Critical	False	False	Error ✗
----	---	----------	-------	-------	---------

**Generated fix:**

ip arp inspection validate src-mac dst-mac ip

22	Dynamic ARP trusted interface(s) set	Critical	False	False	Error ✗
----	--------------------------------------	----------	-------	-------	---------

**Found port(s) with error:**

Port-channel1  
GigabitEthernet0/1  
GigabitEthernet1/0  
GigabitEthernet1/1  
GigabitEthernet1/2

**Generated fix:**

```
interface Port-channel1
ip arp inspection trust
exit
interface GigabitEthernet0/1
ip arp inspection trust
exit
interface GigabitEthernet1/0
ip arp inspection trust
exit
interface GigabitEthernet1/1
ip arp inspection trust
exit
interface GigabitEthernet1/2
ip arp inspection trust
exit
```

23	IPv6 ND inspection policy	Critical	True	False	Not relevant ✓
----	---------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

24	IPv6 ND inspection on interface(s) set	Critical	True	False	Not relevant ✓
----	--	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

25	IPv6 Snooping policy	Critical	True	False	Not relevant ✓
----	----------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

26	IPv6 Snooping on interface(s) set	Critical	True	False	Not relevant ✓
----	-----------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

27	IP Source Guard on interface(s) set	Critical	False	False	Error ✗
----	-------------------------------------	----------	-------	-------	---------

**Found port(s) with error:**

```
GigabitEthernet0/2
GigabitEthernet0/3
GigabitEthernet1/3
GigabitEthernet2/0
GigabitEthernet2/1
GigabitEthernet2/2
GigabitEthernet2/3
GigabitEthernet3/0
GigabitEthernet3/1
GigabitEthernet3/2
GigabitEthernet3/3
```

**Generated fix:**

```
interface GigabitEthernet0/2
ip verify source port-security
exit
interface GigabitEthernet0/3
ip verify source port-security
exit
interface GigabitEthernet1/3
ip verify source port-security
exit
interface GigabitEthernet2/0
ip verify source port-security
exit
interface GigabitEthernet2/1
ip verify source port-security
exit
interface GigabitEthernet2/2
ip verify source port-security
exit
interface GigabitEthernet2/3
ip verify source port-security
exit
interface GigabitEthernet3/0
ip verify source port-security
exit
interface GigabitEthernet3/1
ip verify source port-security
exit
interface GigabitEthernet3/2
ip verify source port-security
exit
interface GigabitEthernet3/3
ip verify source port-security
exit
```

28	IPv6 Source Guard policy	Critical	True	False	Not relevant ✓
----	--------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

29	IPv6 Source Guard on interface(s) set	Critical	True	False	Not relevant ✓
----	---------------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

30	IPv6 Destination Guard policy	Critical	True	False	Not relevant ✓
----	-------------------------------	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

31	IPv6 Destination Guard on interface(s) set	Critical	True	False	Not relevant ✓
----	--	----------	------	-------	-------------------

**Comment:**

Skipped, required function ipv6 not configured on device. Everything is OK.

## Other

No.	Name	Severity	Skipped	Cannot determine search/fix	Status
1	Servis PAD disabled (Packet assembler disassembler)	High	False	False	Error ✗
<b>Generated fix:</b> no service pad					
2	BOOTP server disabled	High	False	False	Error ✗
<b>Generated fix:</b> no ip bootp server					
3	Finger protocol disabled	High	False	False	Successful ✓

4	HTTP server disabled	High	False	False	Error ❌
<b>Error configuration setting found in:</b> ip http server					
5	HTTPS server disabled	High	False	False	Successful ✔️
6	TCP small server disabled	High	False	False	Successful ✔️
7	UDP small server disabled	High	False	False	Successful ✔️
8	IP domain lookup disabled	High	False	False	Error ❌
<b>Generated fix:</b> no ip domain-lookup no ip domain lookup					
<b>Fix notice:</b> Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.					
9	Gratuitous ARPs generation disabled	High	False	False	Error ❌
<b>Generated fix:</b> no ip gratuitous-arps					
10	Gratuitous ARPs reject enabled	High	False	False	Error ❌
<b>Generated fix:</b> ip arp gratuitous none					
11	Netflow is disabled	Notice	False	False	Successful ✔️
<b>Fix ignore comment:</b> By default fix is ignored due to disablement of traffic monitoring. Consider whether port mirroring is necessary for monitoring					
12	Netflow version 9 used	Medium	False	False	Not relevant ✔️
<b>Comment:</b> Module 15_14_netflow_version_9.yaml configured to run after 15_13_netflow.yaml with status error but that module has not run yet with specified cmd_match_status, 15_14_netflow_version_9.yaml will not run					
13	Netflow traffic analyze disabled on interface(s)	Notice	False	False	Not relevant ✔️
<b>Comment:</b> Module 15_15_netflow_interface.yaml configured to run after 15_13_netflow.yaml with status error but that module has not run yet with specified cmd_match_status, 15_15_netflow_interface.yaml will not run					
<b>Fix ignore comment:</b> By default fix is ignored due to disablement of traffic monitoring. Consider whether port mirroring is necessary for monitoring					
14	Port mirroring disabled on interface(s)	Notice	False	False	Successful ✔️
<b>Fix ignore comment:</b> By default fix is ignored due to disablement of traffic monitoring. Consider whether port mirroring is necessary for monitoring					
15	Set always "UP" Loopback interface with IP address	Medium	False	False	Error ❌
<b>Generated fix:</b> interface loopback 0 ip address 1.1.1.1 255.255.255.0 snmp ifindex persist no ip redirects no ip unreachableables no ipv6 unreachableables no ip proxy-arp exit					
<b>Fix notice:</b> If IP address and mask is not in this module, fallback settings from own_variables.yaml are used. So it may cause same IP on loopbacks accross multiple devices!					
16	Notification on memory IO leak/overflow	Medium	False	False	Error ❌



**Generated fix:**

exception memory ignore overflow io

17	Notification on memory CPU leak/overflow	Medium	False	False	Error ❌
----	--	--------	-------	-------	---------

**Generated fix:**

exception memory ignore overflow processor

18	Network boot disabled	Medium	False	False	Successful ✔
19	Network config load disabled	Medium	False	False	Successful ✔
20	SCP server enabled	Medium	False	False	Error ❌

**Generated fix:**

ip scp server enable

21	SCP alias copy instead of TFTP	High	False	False	Successful ✔
22	Protection of configuration deletion	High	False	False	Error ❌

**Generated fix:**secure boot config  
secure boot-config**Fix notice:**

Just one of fixing command is applicable to device. There are more because of different syntax among IOS versions.

23	Archive and log config changes	Medium	False	False	Error ❌
----	--------------------------------	--------	-------	-------	---------

**Generated fix:**archive  
path unix:  
log config  
logging enable  
notify syslog  
hidekeys  
maximum 5  
time-period 60

24	Terminate hanged inbound TCP connection to device	Medium	False	False	Error ❌
----	---	--------	-------	-------	---------

**Generated fix:**

service tcp-keepalives-in

25	Terminate hanged outbound TCP connection to device	Medium	False	False	Error ❌
----	--	--------	-------	-------	---------

**Generated fix:**

service tcp-keepalives-out

26	Encrypt all saved passwords in configuration	Critical	False	False	Successful ✔
----	--	----------	-------	-------	--------------

**Right configuration setting found in:**

no service password-encryption